CLAIMS

1. A reflective mask blank comprising a substrate, and a multilayer reflective film for reflecting an exposure light and an absorber layer for absorbing the exposure light, which are formed on said substrate in the order named, said reflective mask blank characterized in that

said absorber layer has a layered structure comprising at least an uppermost layer and a lower layer other than it, and said uppermost layer exhibits a reflectance of 20% or less with respect to a light having an inspection wavelength for use in an inspection of an absorber layer pattern formed in said absorber layer and further is formed of an inorganic material having a resistance against an etching condition in forming a pattern in said lower layer.

2. A reflective mask blank comprising a substrate, and a multilayer reflective film for reflecting an exposure light and an absorber layer for absorbing the exposure light, which are formed on said substrate in the order named, said reflective mask blank characterized in that:

said absorber layer has a layered structure comprising at least an uppermost layer and a lower layer other than it, and said uppermost layer exhibits a contrast value of 40% or more relative to a layer just under said absorber layer with respect to a light having an inspection wavelength for use in an inspection of an absorber layer pattern formed in said absorber layer and further is formed of an inorganic material having a resistance against an etching condition in forming a pattern in said lower layer, said contrast value given by an equation of:

$$\text{Contrast Value (\%)} = (R_2 - R_1) / (R_2 + R_1) \times 100$$

(where R_1 represents a reflectance on the surface of the uppermost layer with respect to the light having the inspection wavelength and R_2 represents a reflectance on the surface of the layer just under the absorber layer).

3. A reflective mask blank according to claim 1 or 2, characterized in that the inspection wavelength for use in the inspection of said absorber layer pattern falls within a range of 190 nm to 260 nm.

4. A reflective mask blank according to any of claims 1 to 3, characterized in that an etching selection ratio between said uppermost layer and said lower layer of the absorber layer when forming the pattern in said lower layer is 5 or more.

5. A reflective mask blank according to any of claims 1 to 4, characterized in that said lower layer of the absorber layer is made of a material containing tantalum (Ta) and said uppermost layer is made of a material containing silicon (Si).

6. A reflective mask blank according to any of claims 1 to 5, characterized in that a buffer layer having a resistance against an etching condition in forming the pattern in said lower layer of the absorber layer and correcting the pattern is further provided between said multilayer reflective film and said absorber layer.

7. A reflective mask blank according to claim 6, characterized in that said buffer layer is made of a material containing chromium (Cr).

8. A reflective mask characterized in that said reflective mask is produced by forming the pattern in the absorber layer of the reflective mask blank according to any of claims 1 to 7.

9. A manufacturing method of a reflective mask comprising a substrate, and a multilayer reflective film for reflecting an exposure light and an absorber layer formed in a pattern and absorbing the exposure light, which are formed on said substrate in the order named, said manufacturing method characterized in that:

said absorber layer has a layered structure comprising at least an uppermost layer and a lower layer other than it, said method comprising the

steps of forming a pattern in said uppermost layer, and of etching said lower layer of the absorber layer using the pattern formed in said uppermost layer as a mask to thereby form a pattern in said lower layer.

10. A manufacturing method of a reflective mask according to claim 9, characterized in that a buffer layer having a resistance against an etching condition in forming the pattern in said lower layer of the absorber layer and correcting the pattern is further provided between said multilayer reflective film and said absorber layer and, said method comprising the step, after forming the patterns in said uppermost layer and said lower layer of the absorber layer, of etching said buffer layer using a pattern formed in said absorber layer as a mask to thereby form a pattern in said buffer layer.

11. A pattern transfer method characterized by carrying out a pattern transfer onto a semiconductor substrate by the use of the reflective mask obtained by the manufacturing method of the reflective mask according to claim 9 or 10.